

US EPA ARCHIVE DOCUMENT

Program Evaluation Report

Contra Costa Clean Water Program: Cities of Antioch, Brentwood, and Oakley (NPDES Permit No. CA0083313)

Executive Summary

In March 2005 Tetra Tech, Inc., with assistance from the California Regional Water Quality Control Board, Central Valley Region (Regional Board), conducted a program evaluation of three of the five permittees implementing the Contra Costa Clean Water Program. The purpose of the program evaluation was to determine the permittees' compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CA0083313 and Board Order No. 5-00-120) and to evaluate the current implementation status of the permittees' performance standards with respect to EPA's storm water regulations. The program evaluation included a comprehensive office and in-field verification for most aspects of program implementation for the cities of Antioch, Brentwood, and Oakley.

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate overall progress in implementing the program.

The following potential permit violations and program deficiencies are considered the most significant:

- The cities of Brentwood and Oakley have not developed separate management plans or implementation strategies to fit the site-specific needs, characteristics, and priorities of each community.
- The City of Antioch has not updated its City-specific management plan and has not developed an implementation strategy to fit the site-specific needs, characteristics, and priorities of that community.
- The cities lack adequate measures to assess and evaluate the effectiveness of their programs.
- The cities have not developed separate city-specific Industrial and Commercial Business Inspection Plans.
- The cities of Antioch and Oakley are not implementing the new development standards in their current Order.
- The City of Antioch has not developed a City-specific Illicit Discharge Program Plan.
- The City of Antioch does not inspect industrial and commercial sites that discharge directly to the San Joaquin River.

- The City of Brentwood has failed to inspect most of its industrial facilities categorized as high-priority facilities.
- The City of Oakley's publicly owned new development best management practice (BMP) has not been maintained and is failing.

Several elements of the permittees' storm water programs were particularly notable:

- The cities have voluntarily implemented the new development requirements established in Provision C.3.
- The City of Antioch reorganized its Engineering, Building, Capital Improvement, Code Enforcement, and Planning departments under one department that reports to the City Engineer.
- The City of Brentwood has developed a pilot program to address runoff from agricultural sources.

CONTENTS

1.0 Introduction 1

1.1 Program Evaluation Purpose 1

1.2 Permit History 1

1.3 Logistics and Program Evaluation Preparation 1

1.4 Program Areas Evaluated..... 2

1.5 Program Areas Not Evaluated 3

1.6 Program Areas Recommended for Further Evaluation..... 4

2.0 Program Evaluation Results 4

2.1 City of Antioch 4

2.1.1 Evaluation of Program Management..... 4

2.1.2 Evaluation of Construction and New Development Program 7

2.1.3 Evaluation of Illicit Discharge Program..... 9

2.1.4 Evaluation of Municipal Maintenance Activities Program 11

2.1.5 Evaluation of Industrial/Commercial Inspection Program..... 12

2.2 City of Brentwood 15

2.2.1 Evaluation of Program Management..... 15

2.2.2 Evaluation of Construction and New Development Program 17

2.2.3 Evaluation of Municipal Maintenance Activities Program 18

2.2.4 Evaluation of Inspection Activities and Industrial Outreach..... 19

2.2.5 Evaluation of Education and Outreach Program..... 19

2.3 City of Oakley 20

2.3.1 Evaluation of Program Management..... 20

2.3.2 Evaluation of Construction and New Development Program 22

2.3.3 Evaluation of Municipal Maintenance Activities Program 25

2.3.4 Evaluation of Industrial/Commercial Inspection Program..... 26

2.3.5 Evaluation of Education and Outreach Program..... 26

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1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the permittees' compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CA0083313 and Board Order No. 5-00-120) and to evaluate the current implementation status of the permittees' performance standards with respect to EPA's storm water regulations. Secondary goals included the following:

- Review the overall effectiveness of the Clean Water Program (CWP).
- Acquire data to assist in reissuance of the permit.

Title 40 of the *Code of Federal Regulations* (CFR), section 122.41(i), provides the authority to conduct the program evaluation.

1.2 Permit History

The NPDES storm water permit was issued on June 16, 2000, and is scheduled to expire on June 1, 2005. The current permit, the second issued to the permittees, requires each permittee to follow the Contra Costa CWP's Storm Water Management Plan (SWMP) issued on September 15, 1998 (1998–2003) and associated performance standards. The performance standards represent the level of effort required of each permittee and are essentially best management practices (BMPs) that each permittee must implement.

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed the following CWP materials:

- NPDES Permit No. CA0083313
- Contra Costa CWP's Storm Water Management Plan (1998–2003) and associated performance standards
- 2003/2004 Annual Reports for each of the permittees
- Regional Board correspondence with each permittee

On March 15–17, 2005, Tetra Tech, Inc., with assistance from Regional Board staff, conducted the program evaluation. The evaluation schedule is provided on page 2.

Upon completion of the evaluation, an exit interview was held with each permittee to discuss the preliminary findings. During the exit interview, the attendees were informed that the findings were to be considered preliminary pending further review by EPA and the Regional Board.

	Team 1: City of Antioch	Team 2: City of Brentwood	Team 3: City of Oakley
Tuesday, March 15, 2005			
Morning	Program Management; Construction and New Development (office)	Program Management; Construction and New Development (office)	Program Management; Construction and New Development (office)
Afternoon	New Development and Construction Controls (office)	New Development and Construction Controls (office)	New Development and Construction Controls (office)
Wednesday, March 16, 2005			
Morning	New Development and Construction Controls (field)	New Development and Construction Controls (field)	New Development and Construction Controls (field)
Afternoon	Illicit Discharge Control Activities (office); Municipal Maintenance Activities (office and field)	New Development and Construction Controls (field); Municipal Maintenance Activities (office)	New Development and Construction Controls (field); Municipal Maintenance Activities (office)
Thursday, March 17, 2005			
Morning	Inspection Activities (office and field)	Maintenance Activities (office); Inspection Activities (office)	Maintenance Activities (office); Inspection Activities (office)
Afternoon	Inspection Activities (field); Outbrief (office)	Public Education and Outreach (office); Outbrief (office)	Public Education and Outreach (office); Outbrief (office)

1.4 Program Areas Evaluated

A comprehensive evaluation was conducted for each of the permittees for most program areas. At the request of the Regional Board, a more detailed review of specific program areas was conducted. As a result, some program areas received a brief overview or were not addressed during the audit. A brief description of the program areas evaluated for each permittee is provided below.

For the City of Antioch, the following program areas were evaluated:

- Program Management
- New Development and Construction Controls (emphasis)
- Illicit Discharge Control Activities
- Municipal Maintenance
- Inspection Activities (emphasis)

For the cities of Brentwood and Oakley, the following program areas were evaluated:

- Program Management
- New Development and Construction Controls (emphasis)
- Municipal Maintenance
- Inspection Activities
- Education and Outreach

The cities of Antioch, Brentwood, and Oakley are in Contra Costa County and are members of the Contra Costa CWP. Other cities in Contra Costa County outside the jurisdiction of the Regional Board are also members of the CWP and are subject to municipal separate storm sewer system (MS4) permitting requirements issued by the California Regional Water Quality Control Board, San Francisco Region (San Francisco Regional Board). On February 19, 2003, the San Francisco Regional Board amended the MS4 permit issued to other communities in Contra Costa County to require additional treatment controls for certain new development and significant redevelopment projects. To ensure consistency, on October 1, 2003, the San Francisco Regional Board sent a letter to the cities of Antioch, Brentwood, and Oakley requesting that the cities consider voluntarily implementing the new development requirements. The cities have done so; however, because of this recent program modification, new development controls could not be fully evaluated at the time of this program evaluation and could not be evaluated for compliance with permit conditions. In general, however, it did appear that the permittees had begun to develop and implement a policy for establishing post-construction runoff controls for new developments.

1.5 Program Areas Not Evaluated

The following areas were not evaluated in detail as part of the program evaluation:

- Public education and industrial outreach for the City of Antioch (although industrial outreach was addressed during the evaluation of inspection activities).
- Field activities associated with industrial inspections for the cities of Brentwood and Oakley.
- Field activities associated with illicit discharges for the City of Antioch.
- Illicit discharge program for the cities of Brentwood and Oakley.
- Wet-weather monitoring program and monitoring program details (e.g., sample location, types, frequency, parameters).
- Other NPDES permits issued to the permittees (e.g., industrial or construction NPDES storm water permits).
- Inspection reports, plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the CWP were being implemented as described. Instead, observations by the evaluation team and

statements from the permittees' representatives were used to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

1.6 Program Areas Recommended for Further Evaluation

The evaluation team recommends the following additional assessments:

- Additional in-field evaluation of industrial inspection activities being implemented by Contra Costa County for industries located outside but immediately adjacent to the City of Antioch's city limits and discharging directly to the San Joaquin River.
- An evaluation of all permittees implementing new development and construction programs developed to implement treatment controls for certain new development and significant redevelopment projects.

2.0 Program Evaluation Results

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate a permittee's overall progress in implementing the CWP. The evaluation team identified only positive attributes that were innovative (beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative. The evaluation team did not evaluate all components of each permittee's CWP. Therefore, the permittees should not consider the enclosed list of violations, deficiencies, and attributes a comprehensive evaluation of individual program elements.

The most significant potential permit violations, program deficiencies, and positive attributes identified during the evaluation are noted in the Executive Summary and are identified with text boxes in the following subsections.

2.1 City of Antioch

2.1.1 Evaluation of Program Management

Potential Permit Violation:

- *The City of Antioch lacks adequate measures to evaluate and assess the effectiveness of its BMPs.*

Provision D.5 of Order 5-00-120 requires the City to submit an Annual Report each year. As part of the Annual Report preparation process, the City is to "...conduct an overall evaluation of the effectiveness of its applicable activities described in the Plan..." The City uses the Annual Report checklist that was developed by the CWP, and the City's storm water program manager is responsible for compiling and submitting the Annual Report. Each department in the City that is responsible for implementing various BMPs in the SWMP is responsible for compiling data and reporting the data to the storm water program manager. In 2003/2004 almost all the

BMPs implemented were checked as “effective”; however, the City has not developed measures or tools by which effectiveness is to be determined, confirmed, or validated. For example, during the field portion of the audit for construction site inspections, deficiencies were noted at two sites visited that indicate that additional training of field inspectors for the City is warranted, yet the 2003/2004 Annual Report indicated that construction inspection activities and construction inspector training are effective. Merely implementing a performance standard might or might not indicate that the BMP itself is effective. The City should develop measures or tools to help in assessing and evaluating whether a BMP or components of BMPs have been implemented and are effective, or tools or processes by which BMP effectiveness can be confirmed or validated.

For additional information on program effectiveness, the City should review the presentations from the November 14, 2003, meeting of the California Storm Water Quality Association. That meeting focused on MS4 program effectiveness and how MS4s can document such effectiveness. The presentation materials are available at <http://www.casqa.org/meetings/presentations.html>. An additional resource is *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs* developed by the San Diego Municipal Storm Water copermittees. A copy of the report is available at http://www.projectcleanwater.org/pdf/copermittees/assessment_framework_final.pdf.

Positive Attributes:

- *The City of Antioch effectively uses the resources provided by the Contra Costa County CWP.*

The CWP Management Committee is composed of representatives from each copermittee and is the primary decision-making body for the Contra Costa CWP. An Administrative Committee provides support on administration, strategic planning, personnel, budgets, and conflict resolution. In addition, three other committees—the New Development and Construction Control Committee, the Public Education and Industrial Outreach Committee, and the Monitoring and Inspection Committee—focus on specific subject areas of the permit. These committees provide a structure for permittees to share information and knowledge gained through implementing the CWP and benefit all participants. A countywide management committee and administrative committee, along with several technical committees, help provide program direction, consistency, and guidance to all permittees. The City of Antioch ensures that appropriate staff actively participates in the CWP committees and workgroups. The City also fully utilizes all training and education provided by the CWP.

- *The City of Antioch reorganized its Engineering, Building, Capital Improvement, Code Enforcement, and Planning departments in mid-2002 and placed them under one division that reports to the City Engineer.*

Reorganization of the Engineering, Building, Capital Improvement, Code Enforcement, and Planning departments under one division reporting to the City Engineer significantly improved the City’s ability to implement and manage its storm

water program. The reorganization removed the typical multi-department/activity management difficulties faced by many MS4s throughout California by ensuring that the multiple departments within the MS4 organization tasked with implementing the various program requirements report to the manager responsible for compliance with the City's permit and SWMP.

Deficiencies Noted:

- *The City of Antioch has not been reviewed or updated its City-specific SWMP since the plan was developed in 1993.*

The City voluntarily developed a City-specific SWMP in 1993; however, failure to update the SWMP is a significant deficiency that the City should address as soon as reasonably possible. The CWP recently updated the general SWMP for all MS4s within Contra Costa County. As part of the update, the CWP conducted an evaluation and assessment of its monitoring data to evaluate the reasonable potential for pollutants in runoff to affect water quality and to develop a list of pollutants of concern for runoff from urbanized areas within the County. The CWP did this on a countywide and city basis. It was done to help the program develop its program priorities by using an environmentally focused approach. The City should update its SWMP to address the changes made to its program since 1993 and to ensure that its City-specific SWMP adequately addresses the pollutants of concern identified by the CWP. Once revisions have been made, the City should provide outreach and training to City staff and contractors responsible for implementing the City-specific SWMP. To see examples, the permittees could review the Jurisdictional Urban Runoff Management Programs developed by each municipality in San Diego County and the storm water plan developed by the City of Sacramento. Both programs have developed regional management objectives and local implementation plans.

- *The City of Antioch does not have a formal management structure or organization chart for the City's storm water program.*
The SWMP developed in 1993 does not contain a section on program management and does not contain a storm water program management structure or organization chart. Although the current reorganization has helped the program and the current management structure is working very effectively, future changes in management, organization, or personnel might have a negative impact on program implementation and effectiveness if no program management structure or organization chart is clearly delineated in a document adopted by the City. At a minimum, and as part of the revisions to the City-specific SWMP, the City should develop a storm water management program organization chart and a management structure that assigns tasks and responsibilities to the various departments and managers. The responsible parties should be held accountable for developing, implementing, monitoring, and reporting on their assigned activities. The program management structure should include a decision-making matrix and the assigned authorities within the program, and it should describe how conflict resolution will be implemented.

2.1.2 Evaluation of Construction and New Development Program

Potential Permit Violation:

- *City staff were not fully aware of the new development requirements in the current Order 5-00-120.*

Provision D.3 of Order 5-00-120 required the City to implement the BMPs contained in the SWMP, which included new development performance measures. Performance standards NDCC-7 and NDCC-11 require that proponents of new development projects that might have significant storm water pollution potential mitigate impacts through site planning and design or by installing permanent storm water quality controls. During the audit City representatives acknowledged that they had not implemented the new development standards and had not established conditions on projects to address the new development requirements.

Positive Attributes:

- *The City of Antioch is voluntarily implementing Provision C.3 for new development controls.*

At the request of the Regional Board, in the past few months the City has voluntarily developed and is now implementing new development requirements that are consistent with the new development requirements established by the San Francisco Regional Board in Order R2-2003-0022. Order R2-2003-0022 amended NPDES Municipal Storm Water Permit Order 99-058 to include Provision C.3, which establishes prescriptive new development BMP requirements for Contra Costa County and 18 other MS4s named as co-permittees within the jurisdiction of the San Francisco Regional Board. The City of Antioch is implementing a new development program developed through the CWP that is designed to comply with Provision C.3.

Deficiencies Noted:

- *The City of Antioch has not developed a list of City-specific, authorized new development BMPs.*

The City of Antioch has not developed a City-specific list of authorized new development BMPs that developers can implement. Instead, the City allows the developers to propose any types of BMPs they deem appropriate, subject to the City's review and approval. Other MS4 programs have not always been successful in implementing this type of flexible approach. It is recommended that the City reconsider its approach; establish a list of acceptable BMPs; and provide opportunities for equivalent, alternative BMPs to be submitted by developers. For example, the City of Sacramento has implemented a technical guidance manual that identifies specific new development BMPs that the City has identified as approved BMPs for commercial and industrial development. The manual provides fact sheets containing site, design, construction, operation, and maintenance standards and specifications for these BMPs. The manual allows a developer to propose equivalent, alternative BMPs in lieu of the approved BMPs provided adequate justification is provided. As an incentive for a developer to select City-approved BMPs, the manual

indicates that plans submitted with the alternative BMPs will require additional time for review and approval, which could result in delays in final approval of the plans. The County of Ventura also provides a technical guidance manual, which is available at <http://www.vcstormwater.org/publications.htm>.

- *The City's construction site inspection forms could be improved to help ensure consistency among inspectors and ensure compliance with storm water program requirements.*

The City has developed two inspection checklists—one for pre-rainy season inspections and one for regularly scheduled construction site inspections. During the field portion of the audit, the evaluation team noted the following items that the City should consider incorporating into its construction site inspection forms to help improve the effectiveness of the inspections:

- Develop a carbonless, triplicate form for the pre-rainy season inspection form.
 - Include a line item or check box to identify the type of inspection, such as follow-up, enforcement, first inspection, and so forth.
 - Include a check box to indicate whether a rain event was expected at the time of the inspection.
 - Include a check box indicating whether non-storm water discharges were observed, as well as a box to indicate whether discharges were discontinued during the inspection.
 - Include a check box indicating that the storm water pollution prevention plan (SWPPP) inspection log for the site representative was reviewed and completed. Include check boxes to indicate whether the construction site inspector is conducting inspections before all anticipated storm events and after all storm events.
 - Include a check box to indicate that the City inspector verified that all BMPs were maintained and in place for all inspections that occurred prior to anticipated storm events.
 - Include rating check boxes for observations regarding the effectiveness of BMPs that are to be implemented during the home or building construction phases.
- *City of Antioch Building Code staff require additional on-the-job training and guidance in conducting and implementing construction site inspections.*
The City of Antioch's Building Code staff recently incorporated storm water compliance activities into their site inspection program. During the field portion of the audit, it was noted that the inspectors are knowledgeable and aware of the storm water program and its requirements; however, additional on-the-job training for Building Code inspectors is required. During the audit, a significant rain event was anticipated within a few days of the inspections. Deficiencies noted during the field inspection component of the audit included the following:
 - A commercial site under active construction was not adequately implementing or maintaining its BMPs, even though a Building Code inspector had previously inspected the site. The facility representative was not on-site. The inspector planned to contact the site representative upon returning to the office.

City inspectors reviewed the facility's SWPPP for its inspection log but looked for only inspections conducted after actual rain events and not for pre-rain inspections. During the inspection it was noted that many BMPs were not in adequate condition for the pending storm event. Problems included the following:

1. A major slope in the inactive area had failed, and measures implemented to prevent further slope failure had failed and, at the direction of the developer, had not been maintained. With a significant storm event anticipated, the developer failed to implement controls to contain the soil if additional slope failure should occur.
2. Filter drains installed on inactive lots to prevent sediment from leaving the lot were not maintained.
3. BMPs implemented on lots under active building construction were inappropriate or ineffective.
4. Non-storm water was observed along the curb running into a storm drain.

All of the above items should have been observed and corrected by the site superintendent during the pre-storm inspection. Of the deficiencies noted above, items 1 and 2 were noted by the City inspector and discussed during the inspection with the site superintendent. The City inspector did not address items 3 and 4 and did not direct the site representative to stop the non-storm water discharge.

2.1.3 Evaluation of Illicit Discharge Program

Potential Permit Violation:

- *The City uses the model Illicit Discharge Program Plan developed by the CWP but has not developed a City-specific plan.*

Performance Measure IDCA-1 requires each municipality in the CWP to prepare a written Illicit Discharge Control Plan to demonstrate its commitment to implementing effective investigation, tracking, and elimination of illicit discharges. The Plan should describe the level of effort for conducting these activities in the following fiscal year. The CWP developed a model Illicit Discharge Control Plan that the municipalities could use as a basis for a City-specific plan. The City had not revised the CWP model plan, and Public Works Department staff was not aware of the Plan. Although the current Illicit Discharge Control Plan implemented by the City appeared adequate during the audit, it is necessary that a written plan be developed to ensure the long-term integrity of the program; that the roles and responsibilities of each department in implementing, enforcing, and reporting the program are clearly established in writing; and that the activities and BMPs continue to be implemented. The City indicated during the audit that it intends to review and revise the Plan. Once the Plan has been revised, it is recommended that the City provide training to present the Plan and its contents to, at a minimum, the Public Works and Code Enforcement departments and to other departments as needed.

Positive Attributes:

- The City of Antioch effectively uses its Code Enforcement and Public Works departments to implement and enforce its Illicit Discharge Program.*

The Public Works Department conducts surveys of the City's storm drain system and effectively uses the City's Code Enforcement Department to stop illegal discharges or remove illicit connections to the storm drain system when such action requires the City to have immediate access to private property. The Code Enforcement Department remains at the site until the problem has been resolved. Conversely, whenever Code Enforcement staff identifies a potential or actual illegal discharge within the public right-of-way, they contact the Public Works Department.
- The City of Antioch uses a geographic information system (GIS) in its maintenance management database to identify locations of illicit discharges.*

The City recently completed entering its entire storm drain system into its Computerized Maintenance Management System (CMMS), which has GIS capabilities. All Illicit Discharge Program activities conducted by Public Works Department employees will be captured by the GIS.

Deficiencies Noted:

- The City's Code Enforcement Department currently responds only to complaints regarding illegal discharges and is not proactively involved in the Illicit Discharge Program.*

Currently, the Code Enforcement Department acts on illicit discharges or illegal dumping incidents only in response to complaints or call-outs by the Public Works Department. The Code Enforcement Department does not have a process in place to proactively investigate and identify illicit discharges or illegal dumping. In addition, during the audit the Code Enforcement Department representative indicated the staff members need additional training in implementing the storm water program requirements. It is recommended that the City provide additional training to Code Enforcement staff and revise its Illicit Discharge Plan to include a more proactive approach to identifying illicit discharges and illegal dumping for the Code Enforcement Department. Surveillance activities of the Code Enforcement Department would be conducted in coordination and collaboration with Public Works Department activities.
- The City does not maintain a single database for tracking illicit discharges.*

Currently, all illicit discharge program activities conducted by the Public Works Department are tracked in the CMMS database system, which has GIS capabilities. All illicit discharge program activities conducted by the Code Enforcement Department are tracked in the Community Development Department database, which has no GIS capabilities at this time; however, the City intends to add this capability in the future. The storm water program manager must obtain information from both databases to report Illicit Discharge Program activities. GIS provides a valuable tool to the storm water program for tracking activities, identifying problem areas, prioritizing Illicit Discharge Program activities, and reporting activities. The City

should consider expanding its GIS capabilities to include the data contained in the CRW database.

- *The City has not developed an inspection form for Illicit Discharge Program staff.* To ensure that the Illicit Discharge Program is implemented in accordance with the City's protocol for identifying and confirming illicit discharges, the City should develop a standard form to be used by all City staff responsible for implementing the Illicit Discharge Program. This approach would also ensure consistent reporting of illicit discharge activities by City staff.

2.1.4 Evaluation of Municipal Maintenance Activities Program

Positive Attributes:

- *The Public Works Department tracks all of its activities in a database that ties into the City's GIS system.*
The City recognizes GIS as a useful and important tool for implementing and tracking its storm water program activities. The City has completed a survey of its entire storm drain system, and the survey is available through the City's GIS. The City intends to expand the use of GIS in other storm water program activities.
- *The City of Antioch effectively combined the implementation of integrated pest management (IPM) practices with a community event.*
Last year, in an effort to reduce the use of pesticides to control an aphid infestation in the City's downtown area, the City held a community event for the release of 35,000 ladybugs. This family event occurred in the evening, and children were asked to bring their water guns to spray the trees before the ladybugs were released. The event turned into an enjoyable "water fight" for the kids and ended with the spectacular release of the 35,000 ladybugs. The event and the IPM approach were both a success, and the City intends to make it an annual event.

Deficiencies Noted:

- *Pesticides program records are tracked manually.*
The City currently tracks and reports its pesticide use manually on forms required by the State of California. The data are not stored electronically. Manual tracking of this information makes reporting, compiling, evaluating, and assessing trends or reductions of chemical use difficult. The City should consider implementing an electronic method to record and report chemical use and storage and should consider linking this information to the GIS system.
- *The City representative indicated that the City uses an IPM plan implemented by the County, but the plan was not readily available during the audit.*
During the audit it was evident that the City was implementing various methods to use less toxic chemicals and to reduce chemical use, but the City representatives indicated that the City does not have a goal for chemical reduction and does not have a City-specific plan for implementing IPM measures to help reduce the City's reliance on chemicals. Performance Measure MUNI-123 requires the City to consider

alternatives to pesticide/herbicide use. Meeting this standard could be achieved through the development and implementation of a City-specific IPM plan. Such a plan could identify the type and frequency of pesticide application or prohibition based on certain factors, such as geographic locations or areas, seasons or weather conditions, proximity to water bodies, type of vegetation, and the like. The City of Richmond might provide a valuable resource to the City for considering effective IPM measures. The City of Richmond chose to implement an IPM program not only because it wanted to reduce costs but also because it had lost its primary supplier of pre-emergent chemicals. The City found the IPM program to be very effective and now uses chemicals as a last resort. IPM techniques such as mulching and improved plant selection have greatly reduced the need for herbicides. The City of Richmond learned about many of its adopted IPM techniques through its applicators. The City selectively chooses where and when to apply chemicals using field observations, and now it focuses on maintaining ground cover. Previously, chemicals were applied seasonally without regard for other criteria.

2.1.5 Evaluation of Industrial/Commercial Inspection Program

Potential Permit Violation:

- *The City uses the model Industrial and Commercial Business Inspection Plan developed by the CWP but has not developed a City-specific plan.*

Performance Measure INSP-1 requires each municipality in the CWP to prepare a written Industrial and Commercial Business Inspection Plan. The CWP developed a model Industrial and Commercial Business Inspection Plan that the municipalities could use as the basis for a City-specific plan. The City has not revised the CWP model plan. Although the current plan for conducting inspections implemented by the City appeared adequate during the audit, it is necessary that a written plan be developed to ensure the long-term integrity of the program. A written plan would also clearly establish the roles and responsibilities of each department in implementing, enforcing, and reporting on the program and identify the activities and BMPs to be implemented. The City storm water manager indicated during the audit that the City intends to review and revise the Plan. Once the Plan has been revised, it is recommended that the City provide training to present the Plan and its contents to, at a minimum, Delta Diablo and the Code Enforcement Department staff and to other departments as needed.

Positive Attribute:

- *The City of Antioch recently implemented a contract through the CWP to use the services of the Delta Diablo Sanitation pretreatment staff to conduct the City's industrial and commercial site inspections.*

Use of the pretreatment program industrial inspectors has been shown to be an effective BMP for many MS4 permittees. Prior to the contract with Delta Diablo, City storm water program staff conducted the industrial and commercial inspections. Use of Delta Diablo to conduct these inspections allows the City's storm water program

staff to act in an oversight role and allows the staff to direct their attention and resources to other program areas.

Deficiencies Noted:

- *The City of Antioch has not audited the inspection program implemented by Delta Diablo.*

Although Delta Diablo is working as a contractor for the City to implement the City's industrial and commercial business inspection program, the City is ultimately responsible for compliance with its permit and SWMP. The City's storm water program should increase its oversight of Delta Diablo. The City should implement procedures to periodically audit inspections conducted by Delta Diablo to make sure the inspections are being conducted adequately and effectively to ensure compliance with the City's storm water program. Such audits would enable the City to identify areas where additional training might be required.

- *Delta Diablo inspectors do not leave a copy of the inspection form with the industrial site representative.*

During an industrial/commercial site inspection, the inspector completes an inspection form. At the end of each site inspection, the inspector reviews the findings with the site representative and then indicates that a copy of the inspection report will be sent to the facility by mail or some other means. This process might result in a delay in the facility's implementing changes to address deficiencies if the site does not receive a copy of the report detailing the deficiencies until some time after the inspection. The City currently uses a carbonless, triplicate inspection form for its construction inspections and has found leaving a copy of the inspection form with the site representative an effective way to bring a site into compliance. It is recommended that the City develop a similar multi-copy, carbonless inspection form for its industrial/commercial inspection program.

It was also observed that some of the sites visited had different owners and operators. Because of this situation, it is recommended that the City provide a copy of the inspection form to both the owner and the operator of the facility.

- *Inspections of industrial/commercial sites that discharge directly to the San Joaquin River are not included in the City's Industrial/Commercial Inspection Program.*

All industrial and commercial sites that are within the City's jurisdiction are subject to the City Code and should be considered when prioritizing industrial and commercial sites for inspection. In fact, Section 6-9-06 of the City Code prohibits the discharge of storm water from premises or an activity that causes or contributes to a violation of the receiving water limitations in the City's NPDES permit. The City should reassess its current listing of industrial and commercial sites to include those sites discharging directly into the San Joaquin River. Although the City is not required to implement or enforce the State of California's General Permit, the City should consider facilities that discharge directly into a receiving water a potential source of pollutants that could cause or contribute to impacts on water quality. For these sites, the City, at a minimum, should implement and enforce the requirements of

the City Code. It is recommended that the City coordinate and collaborate with its Regional Board representative to develop a decision matrix that establishes a trigger for referring these sites to the Regional Board for further action.

- *Additional training for Delta Diablo inspectors is needed.*
 During the in-office discussion of industrial site inspections, the Delta Diablo representatives acknowledged that their inspectors had not inspected an industrial site prior to the one scheduled for the audit and that their staff had not received sufficient training in this area. The need for additional training was noted during the audit of the in-field activity of the inspection program, and it is recommended that the City ensure that the inspectors receive additional training prior to conducting other field inspections. During the in-field audit, it was observed that although the inspector did observe outside activities, the focus of the inspection was primarily on the indoor activities. Additional training may be warranted to direct the inspectors' attention to activities conducted outdoors. Such observations include the following:
 - Reviewing activities related to building maintenance, such as window or building washing.
 - Observing practices for street and parking lot cleaning, including trash and litter pickup.
 - Observing the location of outdoor activities or storage relative to storm drain inlets, including observing the location and exposure of
 - Barrels or drums of liquid materials and the potential for spills or leaks to enter the drains.
 - Outdoor activities such as fueling, trash, and tallow bins.
 - Landscaping activities such as watering practices and chemicals used.

- *Materials used and distributed by field inspectors could be revised or amended to include BMPs or language related specifically to the storm water program.*
 During the in-field audit, it was observed that although the inspector did observe activities outdoors, the materials and brochures provided to the site representative focused primarily on the indoor activities and those that could affect the sanitary sewer and not the storm drain sewer. Based on the inspections, the City should consider the following revisions or additions. It is recommended that the City review and assess materials and brochures distributed to identify additional revisions or amendments that could strengthen its program, including
 - Developing a service station BMP brochure that, at a minimum, addresses items such as facility cleaning, spill and leak response, illegal disposal of used oil and vehicle fluids, and trash and litter pickup.
 - Amending the brochure for vehicle maintenance to include activities conducted outside, in particular staging areas and leaking vehicles.
 - Developing a brochure outlining the responsibilities of owners of facilities operated by a third party.

2.2 City of Brentwood

2.2.1 Evaluation of Program Management

Potential Permit Violation:

- *The City of Brentwood lacks adequate measures to document the effectiveness of individual program elements.*

Provision D.5 of Order 5-00-120 requires the City to submit an Annual Report each year. As part of the Annual Report preparation process, the City is to "...conduct an overall evaluation of the effectiveness of its applicable activities described in the Plan..." The City currently uses the Annual Report checklist that was developed by the CWP. The City fills out a table in its Annual Report for each performance standard, stating whether the performance standard is "effective," "unknown," or "not effective." During the evaluation, there was evidence that the box for "effective" was typically checked without additional justification. For example, performance standard INSP-4 states, "Inspect priority facilities as defined in the inspection plan at least once per year. The goal is to inspect facilities that have the potential to impact storm water quality, at least once during the five-year period." During the evaluation, the City staff acknowledged that they had not inspected all the priority facilities according to this schedule; however, the "effective" box had been checked.

The current method of evaluating the City's storm water program accounts for activities such as the number of public education events, number of catch basins cleaned, number of outfalls inspected, and other basic performance measures. These activities are tracked, but performance standards or goals against which the activities' performance can be measured have not been established. Merely implementing a performance standard might or might not indicate that the BMP itself is effective. The City should develop tools to help in assessing and evaluating whether a BMP or components of BMPs have been implemented and are effective, or tools or processes by which BMP effectiveness can be confirmed or validated.

Refer to the finding in section 2.1.1 for additional resources on program effectiveness.

Positive Attribute:

- *The City of Brentwood effectively uses the resources provided by the Contra Costa County CWP.*

The CWP Management Committee is composed of representatives from each co-permittee and is the primary decision-making body for the Contra Costa CWP. An Administrative Committee provides support on administration, strategic planning, personnel, budgets, and conflict resolution. In addition, three other committees—the New Development and Construction Control Committee, the Public Education and Industrial Outreach Committee, and the Monitoring and Inspection Committee—focus on specific subject areas of the permit. These committees provide a structure for permittees to share information and knowledge gained through implementing the CWP and benefit all participants. A countywide management committee and

administrative committee, along with several technical committees, help provide program direction, consistency, and guidance to all permittees. The City of Brentwood consistently participates in the Management Committee and in the New Development and Construction Control Subcommittee. The City has also attended some of the Public Education Subcommittee and Municipal Subcommittee meetings.

Deficiencies Noted:

- *The City of Brentwood has not developed a separate management plan or implementation strategy to better fit the site-specific needs, characteristics, and priorities of that community.*

The CWP countywide SWMP serves as a framework for the identification, assignment, and implementation of BMPs, providing flexibility to a municipality to address specific problems associated with that community. The City of Brentwood simply follows the SWMP and performance measures developed by the CWP; it does not have a separate plan that it implements. Also, the City appears to establish program priorities on the basis of activities rather than pollutants of concern. Although each co-permittee is required to follow the performance standards, the City of Brentwood has not developed individual plans describing exactly how it will implement the performance standards and who within its organization is responsible for each performance standard. Also, the performance standards developed for all permittees do not provide the detailed direction and guidance that each permittee needs to implement cross-departmental programs. The City should develop a City-specific storm water quality program or strategy that uses the CWP SWMP as its foundation. A City-specific SWMP or a City-specific comprehensive implementation management strategy would allow the City to prioritize the implementation of its program on the basis of the pollutants of concern and the sources of those pollutants that are specific to the City. To see examples, the permittees could review the Jurisdictional Urban Runoff Management Programs developed by each municipality in San Diego County and the storm water plan developed by the City of Sacramento. Both programs have developed regional management objectives and local implementation plans.

- *The City of Brentwood does not have a formal management structure or organization chart for the City's storm water program.*
The City relies on different staff throughout the various City departments or functional areas to consistently and effectively implement and report on the various performance standards contained in the SWMP. Use of various staff adds complexity to program implementation and could cause significant problems if a management structure for the storm water quality program is not established. A clear program management structure is critical to the success of a storm water program. The City should develop a storm water management program organization chart and a management structure that assigns tasks and responsibilities to the various departments and managers. The responsible parties should be held accountable for developing, implementing, monitoring, and reporting on their assigned activities. The program management structure should include a decision-making matrix and describe how conflict resolution will be implemented.

2.2.2 Evaluation of Construction and New Development Program

Positive Attributes:

- *The City has developed procedures to facilitate the review of storm water plans and erosion and sediment control plans and has begun to voluntarily incorporate Provision C.3 for new development controls.*

At the counter, developers are given materials that help explain the new Provision C.3, including (1) the CWP's Provision C.3 fact sheet and (2) a CD that includes several BMP manuals, in addition to the Santa Clara Valley Urban Runoff Pollution Prevention Program's *Guidebook of Site Design Examples*, which provides illustrations and case studies of many Provision C.3 design measures. The City's plan checkers are provided a binder that includes all the standard provisions to ensure that plans are consistently reviewed. In addition, the plan checkers meet weekly to discuss the plans they are reviewing.

- *The City developed informative presentation materials for a SWPPP seminar that was held last fall for staff, developers, and contractors.*
The City developed a PowerPoint presentation that provides background on the City's Municipal Ordinance addressing storm water, as well as the City's enforcement procedures. In addition, the presentation includes many pictures illustrating poorly maintained BMPs and properly implemented BMPs in the City. The City stated that the audience of approximately 90 to 100 people included developers, contractors, subcontractors, and staff. The City hopes to hold such seminars annually.
- *The City has taken steps to ensure the proper maintenance of post-construction BMPs.*
The City has begun to inventory all post-construction BMPs in the City. The City has been locating the BMPs with GPS tools and is entering the facilities in the City's database. The City requires that all post-construction BMPs have maintenance agreements in place before final acceptance. After the manufacturers' maintenance warranties expire, the City will maintain all publicly owned BMPs. As required in Provision C.3, the City is working toward developing a self-certification program to ensure that privately owned BMPs continue to be properly maintained.
- *The City has developed a database to store and summarize construction inspection information.*
After inspections are conducted, the inspectors forward their findings to the Code Enforcement Officer, who enters them into a database. The database allows the City to see at a glance any compliance issues at the construction sites in the City. In time, the City hopes that all inspectors will be able to enter their information in the field using laptop computers.

Deficiencies Noted:

- *The construction inspectors lack consistent documentation procedures for their inspections.*

During the field evaluation, the inspectors indicated that they do not use the same construction checklist during routine inspections. Several different inspection checklists are used, and one inspector keeps notes in a journal instead of using a checklist. The inspection results are then entered into a database; however, not all inspectors provide the results to the staff entering data in a timely matter. The development of a standardized checklist would help the inspectors to evaluate the maintenance of erosion and sediment control BMPs and would ensure consistency among inspectors. The City indicated that it is working toward developing a standard form for use by all City inspectors. It is recommended that the City consider implementing a carbonless triplicate inspection form similar to the City of Antioch's. The inspectors could then leave a copy of the form with the site superintendent at the completion of each inspection.

- *The City's enforcement procedures could be strengthened to better address problematic sites.*

In general, the field evaluations indicated that inspectors have effectively enforced erosion and sediment controls; however, interviews with the City staff indicated that one site in particular was not responsive to multiple citations (six citations, each with a \$500 fine). To address such noncompliant sites, the City should consider issuing stop work notices, enacting a higher fine, or referring such cases to the Regional Board before these sites become a threat to water quality.

2.2.3 Evaluation of Municipal Maintenance Activities Program

Positive Attribute:

- *All storm water generated at the City's corporation yard is collected and treated at the City's wastewater treatment plant prior to being discharged to Marsh Creek.* Samples of the treated effluent from the City's wastewater treatment plant are collected before the effluent is discharged to Marsh Creek to ensure that the water quality of the discharge meets effluent limitations and protects the water quality and beneficial uses of Marsh Creek. The treatment facility also collects samples of groundwater to ensure that groundwater quality is being protected.

Deficiency Noted:

- *Although the storm water is collected and treated prior to discharge to the receiving waters, the City has not implemented adequate source control and pollution prevention BMPs at the municipal yard.*

During the inspection of the parks and recreation area of the corporation yard, several packages of fertilizer were observed sitting outside the storage area. If left exposed during rain events, this fertilizer could contaminate groundwater. In addition, several oil stains were observed in the fleet maintenance area. To ensure that pollutants associated with activities conducted at the maintenance yards are not discharged in runoff to the treatment facility, which could threaten the City's compliance with its treatment plant NPDES permit, the City should implement adequate and effective source control and pollution prevention BMPs, such as good housekeeping and proper storage and management of materials and stockpiles. In addition, the City should

conduct regular inspections of the entire perimeter of the municipal yard to ensure that all storm water is collected and treated and that none is directly discharged from the facility prior to treatment.

2.2.4 Evaluation of Inspection Activities and Industrial Outreach

Potential Permit Violations:

- *The City has prioritized industrial facilities for annual inspections, but only four inspections (in 2004) have been conducted.*

According to the permit and SWMP, the City should be inspecting high-priority facilities at least once a year and medium- and low-priority facilities at least once during the 5-year period. The City has designated more than 200 facilities as high-priority; however, during the permit term only 4 inspections that were not performed in response to a complaint have been conducted. The City indicated that soon-to-be-hired staff would be trained to conduct these inspections. As the City of Brentwood's inspection program gets under way, the City should consider tailoring the CWP's inspection plan to the specific needs of the City.

- *The City uses the model Industrial and Commercial Business Inspection Plan developed by the CWP but has not developed a City-specific plan.*

Performance Measure INSP-1 requires each municipality in the CWP to prepare a written Industrial and Commercial Business Inspection Plan. The CWP developed a model Industrial and Commercial Business Inspection Plan that could be used by the municipalities as the basis for a City-specific plan. The City of Brentwood has not revised the CWP model plan. Although the current plan for conducting inspections implemented by the City appeared adequate during the audit, it is necessary that a written plan be developed to ensure the long-term integrity of the program. A written plan would also clearly establish the roles and responsibilities of each department in implementing, enforcing, and reporting on the program and would identify the activities and BMPs to be implemented.

2.2.5 Evaluation of Education and Outreach Program

Positive Attribute:

- *The City has developed a pilot program to address runoff from agricultural sources.*

Although agricultural runoff is not subject to regulation through the NPDES program, the City of Brentwood has taken steps to mitigate the nonpoint source pollution generated from agricultural areas. The City has designated \$20,000 in funds to help agricultural sites to implement BMPs to prevent silt runoff from entering public drainage systems.

Deficiency Noted:

- *The City has not identified target audiences for its public education and outreach program.*

The CWP conducted a public awareness survey during the first year of the permit term. Although the survey included all of Contra Costa County, the City should review the findings and determine how they might be applicable to Brentwood specifically. Targeting specific audiences would allow the City to focus its outreach efforts where they will have the greatest impact.

2.3 City of Oakley

2.3.1 Evaluation of Program Management

Potential Permit Violation:

- | |
|---|
| <ul style="list-style-type: none"> • <i>The City of Oakley lacks adequate measures to document the effectiveness of individual program elements.</i> |
|---|

Provision D.5 of Order 5-00-120 requires the City to submit an Annual Report each year. As part of the Annual Report preparation process, the City is to "...conduct an overall evaluation of the effectiveness of its applicable activities described in the Plan..." The City currently uses the Annual Report checklist that was developed by the CWP. The City fills out a table in its Annual Report for each performance standard, stating whether the performance standard is "effective," "unknown," or "not effective." During the evaluation, there was evidence that the box for "effective" was typically checked without additional justification. The current format with check boxes indicating whether an activity is implemented and effective without explanation is not very informative and does not adequately highlight program achievements or special circumstances.

The City is not taking adequate steps to evaluate program effectiveness comprehensively and to go beyond the collection of water quality monitoring data. The current Annual Reports provide check boxes for general activities but do not provide detailed analysis evaluating those activities. Merely implementing a performance standard might or might not indicate that the BMP itself is effective. The City should use the Annual Report preparation process to analyze not only what happened but also why it happened and what needs to change in the future to improve the Program (i.e., the City should develop new performance standards and measurable goals). Ultimately, this evaluation will help the City improve implementation and document water quality improvements.

Refer to the finding in section 2.1.1 for additional resources on program effectiveness.

Positive Attributes:

- *The City of Oakley effectively uses the resources provided by the Contra Costa County CWP.*

The CWP Management Committee is composed of representatives from each co-permittee and is the primary decision-making body for the Contra Costa CWP. An Administrative Committee provides support on administration, strategic planning, personnel, budgets, and conflict resolution. In addition, three other committees—the New Development and Construction Control Committee, the Public Education and Industrial Outreach Committee, and the Monitoring and Inspection Committee—focus on specific subject areas of the permit. These committees provide the structure for permittees to share information and knowledge gained through implementing the CWP and benefit all participants. A countywide management committee and administrative committee, along with several technical committees, help provide program direction, consistency, and guidance to all permittees. The City of Oakley actively participates in the CWP committees and workgroups and uses much of the information and material developed by the CWP.

- *The City's storm water program has strong leadership.*

The City Engineer maintains oversight of all storm water activities, and all program activities are the responsibility of a single department. This approach allows activities to be well coordinated and eliminates conflicting priorities among departments.

Deficiencies Noted:

- *The City does not conduct regularly scheduled, storm water-focused meetings with staff involved in program implementation.*

Storm water-specific meetings for staff responsible for storm water program implementation should be scheduled periodically to discuss program changes and priorities and to share challenges and ideas. Such meetings could include meetings on particular program areas and topics, such as construction inspections and development plan review. In addition, a periodic (e.g., monthly, quarterly) meeting of all storm water-related City employees should be held to update staff about new requirements, initiatives, Regional Board decisions, or other changes to City policies or responsibilities. A performance standard should be developed to ensure that these meetings become a regular part of the City's storm water operations.

- *The City of Oakley has not developed a separate management plan or implementation strategy to better fit the site-specific needs, characteristics, and priorities of that community.*

The CWP countywide SWMP serves as a framework for the identification, assignment, and implementation of BMPs, providing flexibility to a municipality to address specific problems associated with that community. The City of Oakley simply follows the SWMP and performance measures developed by the CWP; it does not have a separate plan that it implements. The CWP defined the focus of its SWMP on the basis of input from the various co-permittees, and this has become the focus for the City. The City should also develop a City-specific strategy for program areas that

are implemented in a fundamentally different way in Oakley than in other jurisdictions, especially for the municipal operations program area, in which most of the NPDES-related activities are contracted to the County or private businesses. Also, although pollutants of concern have been identified by the Contra Costa CWP, they have not driven the City's program activities or priorities. The City should take the lead in identifying sources of key pollutants in the City and tailor its program activities as appropriate. The CWP is in the process of developing action plans for pollutants of concern, but in the meantime the City should examine its own activities and land uses to identify local priorities and begin targeting its management activities. Performance standards should be amended to reflect the City's oversight activities and to ensure that contractors are performing to the level expected by the City and mandated by the permit.

2.3.2 Evaluation of Construction and New Development Program

Potential Permit Violations:

- *A public storm water treatment facility is not functioning as intended.*

The City recently built a soccer field that doubles as an infiltration basin. The project was completed in October 2004. A visit to the site revealed that the system is not functioning as designed, which has resulted in the presence of nuisance standing water. (Associated problems include mosquito vector issues, inadequate drawdown time, flooding and loss of vegetation, and crusting of the soil surface.) As described in Performance Standard NDCC-9, "developers and owner/builders of projects that include permanent structural storm water controls" are required to ensure "ongoing operation and maintenance of such controls." This provision requires that the City inspect and maintain or modify all of its post-construction controls as needed. The City should (1) review site and design specifications to determine whether the specifications are flawed, (2) determine whether the basin was constructed correctly, and (3) determine whether the basin has been properly maintained. Measures should be taken immediately to remove standing water and promote more timely infiltration of storm water and dry weather flows.

- *City staff were not fully aware of the new development requirements specified in Order 5-00-12.*

Provision D.3 of Order 5-00-120 required the City to implement BMPs contained in the SWMP, which included new development performance measures. Performance standards NDCC-7 and NDCC-11 require proponents of new development projects that might have significant storm water pollution potential to mitigate impacts through site planning and design or by installing permanent storm water quality controls. During the audit City representatives acknowledged that they had not implemented new development standards and had not established conditions on projects to address new development requirements.

Positive Attribute:

- *The City is voluntarily implementing Provision C.3 for new development controls.*

At the request of the San Francisco Regional Board, in the past few months the City has voluntarily developed and is now implementing new development requirements that are consistent with the new development requirements established by the Regional Board in Order R2-2003-0022. Order R2-2003-0022 amended NPDES Municipal Storm Water Permit Order 99-058 to include Provision C.3, which establishes prescriptive new development BMP requirements for Contra Costa County and 18 other MS4s named as co-permittees within the jurisdiction of the San Francisco Regional Board. The City of Oakley is implementing the new development program developed through the CWP designed to comply with Provision C.3. This audit focused on evaluating the City's preparation for implementing Provision C.3 because at the time of the evaluation there were no projects subject to Provision C.3.

The City is prepared to effectively provide outreach to the development community and plan review staff on the new requirements. The City has several handbooks and checklists that can be used to improve project submittals and help to ensure a consistent plan review procedure. The City should continue implementing Provision C.3 and have plan reviewers attend CWP-sponsored and other outside training events. Because the City uses a contractor to review site plans, the City should ensure that the contractor is fully versed in the provisions and should include a contractual requirement or equivalent that contract plan reviewers attend training sessions addressing the new development standards. At a minimum, the City should use the checklist developed by the Contra Costa CWP to ensure that all required provisions are met.

Deficiencies Noted:

- *The City has not developed a protocol to assign inspection frequencies to construction sites.*
Site inspections focusing on storm water management and erosion and sediment control are not occurring on a regular basis as prescribed in Performance Standard NDCC-14, although engineering inspectors visit sites daily. The City should determine appropriate frequencies for storm water-focused inspections of construction sites based on site size, proximity to receiving waters, City staffing levels, and other factors that the City deems appropriate. The City should track these regularly scheduled storm water inspections, as well as follow-up inspections and enforcement activities resulting from initial inspections.
- *Inspectors are not consistently transmitting information about construction site conditions and levels of compliance to the storm water program.*
Site inspection records are maintained by the individual inspectors and are not maintained in a centralized filing system. The City should require that inspectors submit regularly scheduled, pre-rainy season, and post-storm event inspection forms (or copies) to the storm water program staff to allow better tracking and to ensure ongoing compliance with permit requirements.

- *The City's storm water inspection form should be revised on the basis of permit requirements and input from inspectors.*

At the time of the evaluation, different site inspectors were not using the same inspection forms, information being reported on the forms was not consistent among inspectors, and some inspectors were not recording information on the forms at all. The lack of a standard form has led to inspection protocols that differ in level of detail among inspectors. A comprehensive form would help to guide the inspection and improve consistency among inspectors. Carbonless forms printed in triplicate would help to streamline the violation notice and enforcement process because inspectors would not have to go to the office to make copies and then return to the site to provide a copy to the construction site operator. In addition, a list of corrective actions with compliance and reinspection dates would also be helpful for both the inspectors and the site operator.

- *The City's construction site inspectors require more on-the-job training, and improved communication is needed among inspectors to ensure consistency.*

The City should implement an on-the-job training program for construction site inspectors and hold regularly scheduled meetings with the inspectors to improve the adequacy and consistency of site inspections. Regularly scheduled meetings would allow inspectors an opportunity to work together to determine how inspections are to be conducted, how follow-up inspections should be conducted, and what minimum standards should be used for site compliance. Less-experienced inspectors could benefit from on-site training with more experienced inspectors. This training would also help to ensure consistency among inspectors. Meetings of the inspectors and the storm water coordinator/City Engineer should be scheduled on a regular basis to talk about storm water issues at individual sites (e.g., to discuss potentially ambiguous issues at a site) and to ensure that any new requirements are being transmitted to staff.

- *The City has not developed minimum standards for either erosion and sediment control or post-construction storm water BMPs.*

According to Performance Standard NDCC-12, minimum BMPs should be expected from contractors. Several of the erosion control plans reviewed during the audit called for straw bales to be used as storm drain inlet protection. The *CASQA Construction BMP Manual* does not recommend the use of straw bales for storm drain inlet protection. When sites were visited, practices other than straw bales were being implemented and sediment was adequately controlled; however, the City should not have approved Erosion and Sediment Control Plans with marginally effective BMPs specified. The City could develop a list of approved practices and provide the list to developers as a guide to ensure that adequate and appropriate BMPs are being proposed in plan submittals. This list of practices should also be provided to plan reviewers to ensure that plans are being checked for consistency with the City standards and rejected when they are not consistent.

- *Construction sites are not being adequately inspected during the building phase of construction.*

Construction sites are to be inspected during all phases of construction until construction is complete and the site is fully stabilized. The City has not implemented an adequate construction site inspection program that is conducted during the building phase of construction. This is one of the construction phases that can be most challenging because of the number of subcontractors on-site and the fact that many different activities occur simultaneously and many different potentially polluting materials (e.g., paint, stucco) are used. At this time the building inspectors are not conducting storm water inspections and are not consistently looking for or notifying the storm water program about violations or illicit discharges. Because the engineering inspectors are no longer visiting the sites during this stage of construction, the building inspectors are essential to ensuring that the City's inspection requirements are being met. The City must develop an inspection program for this phase of construction. At a minimum, the City should train the building inspectors to adequately and effectively conduct such inspections during their normal building code inspections.

2.3.3 Evaluation of Municipal Maintenance Activities Program

Note: The City does not own or operate municipal facilities or material storage areas.

Deficiency Noted:

- *The City does not provide adequate oversight in managing contractors that perform municipal work that could affect storm water quality.*

Most City municipal maintenance activities are contracted out to the County or to private businesses, including MCE Corporation (landscaping), UBS (street sweeping), and Contra Costa County (infrastructure maintenance, illicit discharge detection/elimination, road repairs, and minor maintenance). The City remains fully liable for compliance with all components of its permit and SWMP, even for those activities conducted by contractors. To ensure that municipal activity BMPs are implemented effectively, the City should provide better oversight of its contractors. This increased oversight would help to ensure that work is being performed as expected and that the contractors are meeting the City's standards and permit requirements. The City should develop (1) a procedure for oversight of each activity, (2) contract language obligating contractors to follow permit requirements and guidelines, and (3) performance standards reflecting the City's oversight role that will be incorporated into the Annual Report. Adequate oversight might involve accompanying crews at work sites to ensure that effective procedures are being followed.

2.3.4 Evaluation of Industrial/Commercial Inspection Program

Potential Permit Violation:

- *The City uses the model Industrial and Commercial Business Inspection Plan developed by the CWP but has not developed a City-specific plan.*

Performance Measure INSP-1 requires each municipality in the CWP to prepare a written Industrial and Commercial Business Inspection Plan. The CWP developed a model Industrial and Commercial Business Inspection Plan that could be used by the municipalities as the basis for a City-specific plan. The City of Oakley has not revised the CWP model plan. Although the current plan for conducting inspections implemented by the City appeared adequate during the audit, it is necessary that a written plan be developed to ensure the long-term integrity of the program. A written plan would also clearly establish the roles and responsibilities of each department in implementing, enforcing, and reporting on the program and would identify the activities and BMPs to be implemented.

Deficiency Noted:

- *The City does not provide adequate oversight of the contractor conducting its industrial/commercial inspections to ensure that the contractor is meeting the requirements of the permit.*

The City should provide oversight to the Delta Diablo Sanitation District to ensure that inspection protocols are meeting the City's standards and permit requirements. This might involve accompanying inspectors on site inspections to ensure that inspection procedures meet the City's expectations. The City should develop a procedure for oversight of each activity, contract language obligating contractors to follow storm water permit requirements and guidelines, and performance standards that will be incorporated into the Annual Report. Refer to section 2.1.5 for additional information on the performance of Delta Diablo Sanitation District inspectors in conducting storm water inspections at businesses.

2.3.5 Evaluation of Education and Outreach Program

Deficiencies Noted:

- *The City's education program does not focus on storm water issues and pollutants of concern.*

At the time of the audit, the materials reviewed, including newsletter articles and giveaways, did not have a storm water focus and did not target pollutants of concern. The City should focus its efforts on promoting general storm water awareness, as well as highlighting likely sources of pollutants of concern (pesticide use by homeowners, fluorescent light recycling, and other activities identified by the City). Because most of the land use (existing and proposed) in the City is residential, the City should focus its efforts on public education and homeowner services (e.g., household hazardous waste collection, trash day, landscaping workshops).

- *The City's public education activities are not addressing target audiences.*
During the audit it was not clear that the City had taken steps to identify demographic groups that are likely to contribute to storm water pollution in general and pollutants of concern specifically. Once target audiences have been identified, materials and programs should be designed to address these groups with tailored messages.